



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2018-0180; Product Identifier 2017-CE-043-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Quest Aircraft Design, LLC Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all Quest Aircraft Design, LLC Model KODIAK 100 airplanes. This proposed AD was prompted by reports of cracks found in certain nose landing gear forks. This proposed AD would require a one-time inspection to determine if the affected nose landing gear fork is installed, repetitive inspections of the affected nose landing gear fork for cracks, repetitive inspections of the shimmy damper bracket for looseness if the affected nose landing gear fork is installed, and rework/replacement of parts as necessary. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Quest Aircraft Company LLC, 1200 Turbine Drive, Sandpoint, Idaho 83864; phone: (208) 263-1111 or 1 (866) 263-1112; email: [customerservice@questaircraft.com](mailto:customerservice@questaircraft.com); Internet: <http://customercare.questaircraft.com/>. You may view this service information at the FAA, Policy and Innovation Division, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0180; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Wade Sullivan, Aerospace Engineer, Seattle ACO Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057; phone: 425-917-6430; fax: 425-917-6590; email: [wade.sullivan@faa.gov](mailto:wade.sullivan@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2018-0180; Product Identifier 2017-CE-043-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

### **Discussion**

We received reports from the manufacturer of fatigue cracks on the nose landing gear (NLG) fork on Quest Aircraft Design, LLC Model KODIAK 100 airplanes. In one report, the NLG fork failed during landing. On unimproved surfaces, the NLG shimmy damper system can wear and loosen, reducing the resistance of the nose gear to shimmy. Shimmying puts side loads on the NLG fork that it was not designed for, which could cause fatigue cracks. This condition, if not corrected, could result in separation of the fork with consequent reduced control on landing. If the fork separates on an unimproved surface, the risk of the NLG digging in and the airplane overturning on the ground increases.

**Related Service Information under 1 CFR part 51**

We reviewed Quest Aircraft Field Service Instruction FSI-147, Revision 00 (not dated), which provides instructions for inspection and, if necessary, replacement of the NLG fork. We reviewed pages 32\_110 and 32\_111, section 3252, Shimmy Damper, found in Chapter 32, Landing Gear, of Quest Aircraft Company Kodiak 100 Maintenance Manual, Revision No. 21, dated February 15, 2017, which describes procedures for inspecting the shimmy damper system. We also reviewed Quest Aircraft Field Service Instruction FSI-146, Revision 00 (not dated), which provides instructions for modifying the shimmy damper attach bracket. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

**FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

**Proposed AD Requirements**

This proposed AD would require accomplishing the actions specified in the service information described previously.

**Costs of Compliance**

We estimate that this proposed AD affects 116 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Determine if type A or type B NLG fork is installed.	1 work-hour X \$85 per hour = \$85	Not applicable	\$85	\$9,860

We estimate the following costs to do any necessary additional inspections, replacements, and modifications that would be required based on the results of the proposed NLG fork type determination. We have no way of determining the number of airplanes that might need these inspections, replacements, and modifications:

### On-condition costs

Action	Labor cost	Parts cost	Cost per product
Inspection of the NLG fork for cracks	4 work-hours X \$85 per hour = \$340	Not applicable	\$340
Replacement of the NLG fork	4 work-hours X \$85 per hour = \$340	\$7,002.36	\$7,342.36
Inspection of the shimmy damper bracket	1 work-hour X \$85 per hour = \$85	Not applicable	\$85
Rework of the shimmy damper bracket	4 work-hours X \$85 per hour = \$340	\$127.33	\$467.33

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to small airplanes, gliders, balloons, airships, domestic business jet transport airplanes, and associated appliances to the Director of the Policy and Innovation Division.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Quest Aircraft Design, LLC:** Docket No. FAA-2018-0180; Product Identifier 2017-CE-043-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Quest Aircraft Design, LLC Model KODIAK 100 airplanes; all serial numbers, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 32, Landing Gear.

**(e) Unsafe Condition**

This AD was prompted by reports from the manufacturer of fatigue cracks on the nose landing gear (NLG) fork. We are issuing this AD to detect and prevent fatigue cracking of the NLG fork. The unsafe condition, if not corrected, could result in separation of the fork with consequent reduced control on landing. If the fork separates on an unimproved surface, the risk of the NLG digging in and the airplane overturning on the ground increases.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspection for Type of NLG Fork**

Within 25 hours time-in-service (TIS) after the effective date of this AD, inspect the airplane to determine if a NLG fork part number (P/N) 100-410-7001 (type A) or a NLG fork P/N 100-410-7013 (type B) is installed. If you determine that a NLG P/N 100-410-7013 (type B) is installed during the inspection, no further action is required by this AD. If a review of the maintenance records can positively identify the P/N NLG fork that is installed, you may use a maintenance records review in lieu of inspecting the airplane to determine if a NLG fork P/N 100-410-7001 (type A) or a NLG fork P/N 100-410-7013 (type B) is installed.

**(h) Inspection of the NLG Fork for Cracks**

(1) If you determine that a NLG fork P/N 100-410-7001 (type A) is installed during the inspection required in paragraph (g) of this AD, within 25 hours TIS after the effective date of this AD and repetitively thereafter at intervals not to exceed 100 hours TIS, do a fluorescent penetrant, dye penetrant, or open-hole eddy current inspection of



the NLG fork for cracks following section 5. Instructions in Quest Aircraft Field Service Instruction FSI-147, Revision 00 (not dated).

(2) If you find any cracks of the NLG fork during any inspection required in paragraph (h)(1) of this AD, before further flight, replace the NLG fork with a NLG fork P/N 100-410-7013 (type B) following section 5. Instructions in Quest Aircraft Field Service Instruction FSI-147, Revision 00 (not dated). Replacement of the NLG fork with a NLG fork P/N 100-410-7013 (type B) terminates the repetitive inspections required in paragraphs (h)(1) and (i)(1) of this AD.

**(i) Inspection of the Shimmy Damper Bracket**

(1) If you have not replaced a NLG fork P/N 100-410-7001 (type A) per the initial inspection and replacement requirements in paragraph (h) of this AD, then within 25 hours TIS after the effective date of this AD and repetitively thereafter at intervals not to exceed 100 hours TIS (until the NLG fork is replaced with a P/N 100-410-7013 (type B fork)), inspect the shimmy damper bracket for looseness following pages 32\_110 and 32\_111, section 3252, Shimmy Damper, found in Chapter 32, Landing Gear, of Quest Aircraft Company Kodiak 100 Maintenance Manual, Revision No. 21, dated February 15, 2017.

(2) If a loose shimmy damper bracket is found during any inspection required in paragraph (i)(1) of this AD, rework the shimmy damper bracket with interference-fit bolts following Quest Aircraft Field Service Instruction FSI-146, Revision 00 (not dated). Reworking the shimmy damper bracket with the interference-fit bolts terminates the repetitive inspections required in paragraph (i)(1) of this AD.

(3) If any other damaged (loose, leaking, corrosion, worn, etc.) components are found in the shimmy damper system during any inspection required in paragraph (i)(1) of this AD, before further flight, replace damaged components as necessary following pages 32\_110 and 32\_111, section 3252, Shimmy Damper, found in Chapter 32, Landing Gear, of Quest Aircraft Company Kodiak 100 Maintenance Manual, Revision No. 21, dated February 15, 2017.

**(j) Optional Terminating Action**

In lieu of the NLG fork and shimmy damper bracket inspections required in paragraphs (h)(1) and (i)(1) of this AD, you may replace the NLG fork P/N 100-410-7001 (type A) with a NLG fork P/N 100-410-7013 (type B) following section 5. Instructions in Quest Aircraft Field Service Instruction FSI-147, Revision 00 (not dated). This replacement terminates the inspection requirements of this AD and no further actions are required.

**(k) Restriction of NLG fork P/N 100-410-7001 (type A) Installation**

Once a NLG fork P/N 100-410-7013 (type B) is installed on an airplane, do not install a NLG fork P/N 100-410-7001 (type A). If a NLG fork P/N 100-410-7013 (type B) is removed from the airplane for any reason (for example, to install floats), you must reinstall a NLG fork P/N 100-410-7013 (type B) when operating with wheels.

**(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (m)(1) of this AD. Information may also be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(m) Related Information**

(1) For more information about this AD, contact Wade Sullivan, Aerospace Engineer, Seattle ACO Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057; phone: 425-917-6430; fax: 425-917-6590; email: wade.sullivan@faa.gov.

(2) For service information identified in this AD, contact Quest Aircraft Company LLC, 1200 Turbine Drive, Sandpoint, Idaho 83864; phone: (208) 263-1111 or 1 (866) 263-1112; email: customerservice@questaircraft.com; Internet: <http://customercare.questaircraft.com/>. You may view this service information at the FAA, Policy and Innovation Division, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.  
Issued in Kansas City, Missouri, on March 1, 2018.

Pat Mullen,  
Acting Deputy Director, Policy & Innovation Division,  
Aircraft Certification Service

[FR Doc. 2018-04650 Filed: 3/7/2018 8:45 am; Publication Date: 3/8/2018]